

STICKS AND STONES

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THIS Oration is given annually to welcome students to the Hospital. In the past, students spent the first two years of study at the University and often wondered when they would ever see a patient. Then they came to hospital and were welcomed at the annual oration. With the new curriculum, students have been in hospital already, but the welcome is no less genuine. I am going to address my remarks to you. However, I see amongst the audience students who could only be classified as mature students. This is, of course, what one would expect. In medicine, one always remains a student, long after acquiring many degrees and qualifications.

Some years ago, I inherited a writing bureau. It has some built-in secret drawers. In one of these were some papers. They identified the owner to have been Captain Narcissus Batt. He had lived in Donegall Place, a residential area in the 19th Century, but moved to a new house he built at Purdysburn. Eventually, Belfast Corporation bought this house and grounds to start a mental hospital. The previous Belfast Asylum was in the grounds where this Royal Hospital complex stands and these grounds were purchased from the Corporation by the Board of Management of the Hospital. Parts of the boundary walls still exist at the Children's Hospital and on the east side close to the Blackwater River, and at the north west corner. Dr. Norman Graham who became superintendant of the Purdysburn Hospital told me that, when he was a doctor at the Asylum here, he used to ride his horse round the grounds daily.

In this bureau there was a letter. It was written by a man to his daughter, Margie, who was on a grand tour of Europe. The address is The Linen Hall, Belfast, and the date 14th March, 1890. He sends her news of friends, sick and well, of visits and of fashions. "Within the past month I have noticed a nice fashion affected by quite a lot of young ladies. Dark blue serge trimmed with a darker blue shade of silk, close to the figure behind, but like a cape in front and very wide long sleeves. Bonnet of the same two shades, close to the head, Salvation Army style, but far smaller and no bows whatever. I thought they were nurses or Church Army, but they are neither. I thought it would have been a nice costume for the lady students of medicine, but these were no students. They were got up to kill, not cure".

As a true Ulsterman, he continues to observe, advise and criticise, and goes on, "I met James Colville in Royal Avenue this morning on his way to the Royal Hospital. He was taking Mr. Cooke a bottle of Fellowe's Syrup at his request as he wants picking up. I think he wants kicking up if somebody would be charitable enough to do it. James says there isn't a thing wrong with him". An interesting paradox of being charitable and kicking him.

As you have heard, I am an orthopaedic surgeon. This means I specialize in a subject which deals with diseases and injuries to the musculo-skeletal system. Cynics have said that a specialist is someone who knows more and more about less and less, until he knows everything about nothing. This could well apply to me and I could be called an educated moron. When I was a child, I remember that games often broke up because of arguments, with abuse being thrown by differing factions. This abuse often ended with the chanting of a rhyme. This was "Sticks and stones may break my bones, but words will never hurt me". Here in this city sticks and stones, and indeed many other things, will break bones, but I am hoping my words to-day will not hurt any one.

While it must be obvious that the earliest surgical treatments were applied to fractures, including fractures of the skull, and so orthopaedic surgeons and neurosurgeons must rate as the first specialists of any kind, it must be appreciated that orthopaedic surgeons deal with many other conditions as well as fractures.

Those among you who are Greek scholars—and I look around and do not see see very many—will know that the term *orthopaedics* arises from the use of two words. These were joined into one by a doctor, Nicolas André, in 1742 when he introduced the term *orthopaedia*, meaning a straight child. "As to the title, I have formed it of two Greek words, viz *orthos*, which signifies straight, free from deformity and *pais*, a child. Out of these two words I have compounded that of *orthopaedia*, to express in one term the design I propose, which is to teach the different methods of preventing and correcting deformities of children". He was treating crippling conditions which produced severe deformity of the spine and limbs, like rickets, tuberculosis and infantile paralysis. The spinal deformity of scoliosis, producing a very twisted spine seen in hunchbacks, was often caused by infantile paralysis, tuberculosis or congenital defects. But most cases of scoliosis are said to be idiopathic. Idiopathic is a medical cover-up term meaning the cause is unknown. An alternative explanation of idiopathic is that the doctor is an idiot and the patient is pathetic.

The treatment of fractures as first recorded in western literature was by Hippocrates. Hippocrates was said to have been born on the Greek island of Cos, now more widely known as the home of a well-known type of lettuce. There, in the square, one can see an enormous plane tree. Under its shade, Hippocrates expounded his medical teachings. It is very noticeable that this particular tree requires continuing arboreal orthopaedic surgery. The wide-spreading branches are supported by a series of crutches. There was little change and certainly little new written after the time of Hippocrates until well into the Middle Ages. Then a professor at the University of Montpellier in the middle of the 14th Century called Guy de Chauliac produced a book indicating the treatment of fractures. In it, he laid down ten necessary criteria, rather like the Ten Commandments. Some of these remain remarkably up to date:

First—A suitable place.

Second—Suitable assistants.

Third—Whites of eggs in good quantity and red oil, and a bandage steeped

in it, which may be in size according to the size of the injured organ. And so he progresses about the splintage.

Eight—Let one have a cradle or suspensory in which the limb will be firmly and evenly placed.

Nine—A mattress bed on which the patient sleeps and if it is necessary let it be perforated so that he may go to stool.

Ten—A cord hanging over the bed or some other thing for him to catch and help himself when he wishes to go to stool or straighten or turn himself.

As can be easily understood, most treatment of orthopaedic conditions was by splintage. Open operations by surgery were not performed until late in the 19th Century. The methods of splintage were often ingenious, many bizarre, and sometimes completely ridiculous. The ideals of treatment were often mixed with more material or even business-like procedures.

The Barber Surgeons of Edinburgh who later founded the Royal College of Surgeons of Edinburgh produced a Seal of Cause in 1505. In it was a paragraph stating that one of their privileges was the sole right of making and selling whisky within the burgh. This clause was allowed to lapse. An unfortunate lapse, because otherwise those of us who are fellows of this College might be drawing dividends instead of making an annual subscription.

As I have mentioned, much of the early splintage was designed to help straighten out crooked spines. Often this meant putting some form of pull or traction on the patient's back by using some combination of struts, cords and weights to pull on the patient's head. This pulling was arranged so that the patient could continue, as normally as possible, the daily task. They could walk around in the splintage. Interference with cultural pursuits had to be avoided and special splintage had to be devised to allow treatment, even during music lessons. The patient must be allowed to get out in the fresh air and visit friends, so different arrangements of splintage were required for this.

Although André devised the term orthopaedia, orthopaedic surgery, as known to-day, did not exist. Surgery of all types was still primitive. Except for sporadic attempts by ingenious individuals, little progress had been made from the days of Hippocrates. The real advancement in the specialty of orthopaedic surgery occurred in the British Isles. The first orthopaedic hospital was the Birmingham Orthopaedic Hospital opened in 1817. The Royal National Hospital in London was the brain child of a physician called William John Little. He had poliomyelitis as a child and developed a paralytic club foot on the left side. This was treated eventually by Stromeyer, a surgeon, in Hanover by the simple method of dividing the Achilles tendon. This operation of tenotomy was done through a minute incision in the hope that the wound would not become infected. Little is best known for his description of cerebral palsy or Little's disease.

Much of the treatment of orthopaedic disease had been carried out by bone setters who were not trained medically. One family of bone setters, who lived in Wales, had for generations been treating fractures and other conditions. Eventually,

one decided that his son should study medicine and surgery, so that he could add such knowledge to his hereditary instincts of bone setting. This was Hugh Owen Thomas, the real founder of modern orthopaedic surgery. He started practice in 1858 in Liverpool, where he treated many thousands of cripples. He devised and made all sorts of splints and his name is still remembered for the splint used for injuries and diseases of the leg, and also the Thomas hip-flexion test which is a part of the basic clinical examination of the hip joint. He treated patients with diseases of joints by a "New and efficient method of enforced, uninterrupted and prolonged rest". His assistant and nephew was Robert Jones. He became Sir Robert Jones and organised the first accident service in the British Isles, to cope with the injuries sustained by the workers building the Manchester Ship Canal. His contribution to the treatment of the injured was recognised during the First World War. He was given a high rank in the Medical Corps. He organized several special hospitals throughout the British Isles to deal with the military casualties. One of these hospitals, in wooden huts, was erected in the grounds of Queen's University, Belfast. Some of these were still in use for other purposes until a few years ago.

The first professor of orthopaedic surgery in the British Isles was Thomas Porter McMurray. He was appointed professor at Liverpool University. He was born in Belfast, where his father, Samuel, was the Headmaster of St. Enoch's Public Elementary School. He graduated at Queen's University in 1910 and devised the operation for hip disease to which his name is attached. He also described a clinical test for tears of the cartilages of the knee joint.

Now, what happened to the development of orthopaedic surgery in this part of the world? When was the first orthopaedic hospital conceived and when was it built? In the year 1872, a Mr. John Martin of Shrigley, Killyleagh, suggested to the Board of Management of the General Hospital, Belfast, that there should be a convalescent hospital in the country so that the patients could be moved from the "vitiated and smokey atmosphere of the town to the pure country air". Mr. Martin gave the grounds called the "Throne Lands" which are situated along the Antrim Road of Belfast to the Board. A charity was set up to collect the necessary money to build the hospital, and it was opened in October, 1874, just two years later. What a contrast to the time required from conception to birth of a hospital, or even a part of a hospital, one hundred years later!

It began with 32 beds for children, and of these one ward was called the "Martin Ward." It was named in memory of the benefactor's son, Samuel, and contained 12 beds to treat diseases of the spine in children. Admission to these beds was not by application to the doctors, but by application to one of the Board of Governors, Mr. Alec MacLaine, who decided which patient should be admitted. Was this system of admission the precursor of what present hospital administrators desire?

Gradually, admissions increased and eventually more than one hundred patients were treated. An analysis of these shows that more than half were orthopaedic patients. Since then the function of the hospital has changed many times. It can be said that the General Hospital, which by 1875 had become the Royal Belfast Hospital, inaugurated and established the first separate hospital accommodation for the treatment of orthopaedic patients. There was no such person as an ortho-

paedic surgeon. Many years passed before any attempt at specialization occurred. As far as I can see, the first surgeon who spent a large part of his time dealing with orthopaedic problems was Harold Price Malcolm. He returned after service in the First World War. He had a large experience of treatment of war injuries. He wrote a thesis for his Mastership of Surgery of the Queen's University of Belfast, in which he described a method of dealing with fractures of the shaft of the femur. This was submitted to the University in June, 1920. It was based on nine month's work under the supervision of Major M. Sinclair at the Number 8 Stationary Hospital, Boulogne, in 1918. He had treated 261 cases of fractures of the shaft of the femur. The basis of the treatment was the use of the Thomas splint, which has been mentioned already. It was introduced into service in 1916 on the recommendation of Sir Robert Jones. After this, the mortality rate from wounds of the thigh bone fell from fifty per cent to fifteen per cent. The details of the application of the splint are given in great detail by Malcolm. One of the necessities, aspiring to almost magical properties, was a substance called Sinclair's Glue. This consisted of glue, water, thymol and glycerine. It provided a very adhesive substance which was painted on the leg and over it bandages were applied. From these bandages strings were attached to the splint to hold the leg firm. The splint was tied to weights to pull on the leg and hold the fracture in position, and the foot was fixed to a wooden footpiece with strips of flannel. If, for some reason, it was not possible to use the glue, then some form of screw or nail was inserted into the bone so that a pull could be maintained on the fracture. What becomes crystal clear is that the detailed meticulous application and careful supervision made the method succeed. Once again, the dictum of Lister that "Success depends upon attention to detail" had been proven.

When I first became a student at this Hospital in the 1930's, Mr. Malcolm was the Surgeon-in-Charge of wards 9 and 10. You may think it a peculiar coincidence that over the door of Ward 10 is inscribed the word "*Sinclair*". However, this does not apply to the originator of Sinclair's Glue, nor indeed to the senior surgeon who has just moved from the unit, Mr. Sinclair Irwin. It is named after the Right Honorable Thomas Sinclair whose nephew, Thomas Sinclair Kirk, or "Surgeon Kirk", was in charge of the unit for many years. The interesting thing about these wards in Malcolm's time was that only male patients were allowed, as he would not treat female patients. He would never have agreed to the Sex Discrimination Act!

The fractures of the shaft of the femur were all lying in Thomas splints applied by Sinclair's method. In those days there were no antibiotics and so the infected fractures had a rather obnoxious smell. When one walked into the ward, the most obvious feature was the presence of many ill patients with legs hanging in splints. This was followed very rapidly by the odour of a mixture of infected flesh and Sinclair's Glue. Mr. Malcolm also was appointed Surgeon to the Graymount Hospital for long-stay patients, which opened on 23rd July, 1922, and he worked there until it closed and also at Greenisland Hospital.

As far as the speciality of orthopaedic surgery was concerned, Northern Ireland remained a backwater. No serious attempt was made to organise a fracture and orthopaedic service in this Hospital. In 1936, Lord Nuffield granted money to stimulate orthopaedic development in backward areas. Twenty-six thousand pounds

was allocated to Northern Ireland, but this was not utilised. In 1940, representatives of hospitals and other organizations formed the Northern Ireland Council for Orthopaedic Development. Prominent in this organization were S. T. Irwin, later Sir Samuel, and Professor J. H. Biggart, later Sir John. S. T. Irwin was a leading surgeon in this Hospital and he had always taken a keen interest in orthopaedic surgery. He gave invaluable help and advice to embryonic surgeons whom he called "young fellows". He was a highly respected fellow of the British Orthopaedic Association and became its Vice-President. He was a member of Parliament for some years. Those of us who knew him will never forget him and the Sir Samuel Irwin Lecture Theatre keeps his memory fresh. Sir John Biggart is still with us. His administrative ability and foresight played a most important part in establishing orthopaedic surgery here.

In 1941, the Board of Management decided to organise the treatment of fractures and allied injuries. An out-patient fracture clinic was built and named in memory of Colonel A. B. Mitchell, who had been interested in orthopaedic surgery throughout his career as a general surgeon. The Surgeon-in-Charge of this clinic was R. J. W. Withers who was the first specialist in orthopaedics in this hospital and indeed in Northern Ireland. His background in general surgical training was reinforced by special training in orthopaedic surgery in Manchester under Sir Harry Platt and Sir Henry Osmond-Clarke. He was meticulous in technique and had perfected the "No touch method" devised by Sir Arbuthnot Lane.

The treatment of fractures by putting splintage inside the body with the use of metal plates, screws and rods had been thought of for many years. The introduction of infection by such methods was the great danger, which produced terrible results. Arbuthnot Lane introduced the technique of applying such plates by using instruments only. The surgeon's hands did not touch the patient's skin or flesh or bones. This he called the "No touch technique". By this method, it was possible to cut down the rate of infection.

Jimmy Withers, as everybody knew him, was a tremendously hard worker, with an amazing memory and an alert mind, which he kept sharpened by the diligent study of a wide spectrum of subjects. He would not tolerate hypocrisy and he abhorred what he called "pseudo-science". He was an excellent teacher and was unselfish in the generous help he gave to his junior colleagues. He enjoyed life, loved meeting people and revelled in listening to, and above all, telling stories. He was a mine of profound knowledge, known to and appreciated by only his closest friends. With his energy and enthusiasm, there gradually developed the Fracture and Orthopaedic Service of this hospital. In addition to his work here, he fought for the establishment of a long-stay orthopaedic hospital. The nucleus of this was begun in Musgrave Park Hospital, Balmoral. Here, an Emergency Medical Service Hospital had been built during World War II on the site of the Balmoral Home for Boys, the local borstal. In 1945, some beds were allocated to orthopaedics. These were in army huts which were designed to last for ten years, but many are still in use over thirty years later. Eventually a new wing was planned and built for orthopaedics, but Jimmy Withers never saw it. His infectious laugh was silenced and his bustling activity stilled by his premature death in 1965. The Orthopaedic Wing in Musgrave Park was completed and opened in 1970 by his widow, Dr. Helen

Withers, who is here to-day. It is named the "Withers Orthopaedic Centre" and is a fitting tribute to the architect of orthopaedic surgery in this province.

There was no in-patient unit in the Royal Victoria Hospital for fracture patients until 1957. Prior to this, the patients were scattered in wards from one end of the hospital to the other. The peripatetic orthopaedic team walked what at times seemed miles to do a ward round. Many of the patients were in the surgical units and on their visits to the orthopaedic team were made as welcome as the flowers in May. They were not just so welcome the other eleven months of the year.

In 1957, an in-patient fracture unit was completed beyond Quinn House. Mr. R. T. Corry, a timber merchant who was a member of the Board of Management, had much to do about its construction, and an excellent structure it is. It did not match the original hospital architecturally and was unkindly called "Corry's cowsheds." When it was finished, it was realised that fracture beds, with their overhead beams, would not fit under the roof which was too low in places. Then came a magnanimous gesture from the gynaecologists. They offered to give their unit, wards 17 and 18, to be used for fractures and they moved into the new accommodation (wards 23 and 24).

Eventually, a new building was planned to deal mainly with injured persons. This is now finished and is called "Block A". The fracture unit moved into one floor of Block A in September, 1975. There are 60 beds in this first-class accommodation, with excellent operating theatres. Here, the most up-to-date methods of treating patients with fractures and allied injuries can be performed by the team of four consultant orthopaedic surgeons and other staff. An orthopaedic surgeon is only one of a team—John Donne's "No man is an island" certainly applies here. Highly trained nursing staff, excellent physiotherapists, occupational therapists, social workers and clerical staff are all essential. Up to date, there has been no move to name Block A or any of its wards, except the ward perched on top and appropriately named the Heron Ward.

When the fracture unit moved, there were 29 female patients. Of these, only five were under the age of 60. The remainder had an average age of 82. When the day comes to name Wards 41 and 42, these are the fracture wards, I hope the female ward will not be named after an administrator—good as he may be at his work. Instead of, say, the "Sir Thomas Brown Ward", I would suggest it be called the "Struldbrug Ward". Struldbrug was one of a class among Luggnaggians in Swift's "Gulliver's Travels", endowed with immortality, but doomed to decrepitude after eighty and most wretched.

This speciality had made many advances, with more and more sophisticated techniques developing all the time. The evolution of any speciality owes much to the advances in other specialities. Anaesthesia has transformed surgery and has made possible procedures previously impossible, and many patients about to speak to Saint Peter have been brought back from the "Pearly Gates" by the wonderful treatment administered in the Respiratory Failure and Intensive Care Unit. Aseptic surgery, the successor of Lord Lister's antiseptic surgery, forms one of the keystones. Radiology is invaluable, being almost the eyes of the orthopaedic surgeon. Antibiotics changed the fate of orthopaedic patients, practically wiping out tuberculosis

and preventing other chronic infections. Vaccines can prevent tetanus and have almost eradicated poliomyelitis, which was a major disease producing orthopaedic deformities.

Gradually, over the years, the surgery of orthopaedics has become more complex. It is now possible to carry out operations which a few years ago would have been unthinkable. Recently the advances in surgery have been so rapid that each year would represent about 1,000 years in the past. Now children with gross deformities can be straightened and cured often by operative techniques. The sufferers from crippling arthritis, and they are vast in numbers, can be given great relief by various forms of surgery, and of these the most startling advance has been the replacement of joints with artificial joints. These have been perfected by technological advances in the use of plastic material and metals, so that metallurgy and other scientific advancements help in the speciality. It is nearly possible to replace any joint in the human body. Now it is possible to re-attach amputated digits or even limbs. This has been successful in a significant number of cases.

It is only a further step into the future to visualise that, as well as transplanting organs, limbs may be transplanted. This will open up a great field of replacement surgery. But wait, is this all very new? The twin Patron Saints of Surgery, Cosmos and Damien, in the 11th Century reported a case of transplanting a leg of a recently deceased Moor on to a white person or, should I say, Caucasian. The result of the transplantation of this black limb on to the white body is not known. If it had been successful, one is led to the facetious thought that this could have been the original recruit for the "Black and White Minstrel Show".

There are still many problems in orthopaedic surgery which have not been solved—malignant tumours, developmental deformities and severe injuries. What William James said still holds good "We live forward, but we understand backwards".

There are in this great hospital complex the three material requirements which you will need for your studies to become doctors and dentists. The first is that the buildings and accommodation are here. The second is that the equipment is available, even the most sophisticated. The third is the highly trained personnel who are willing, keen and anxious to help you. I would ask you to think about three abstract things as well. These are Faith, Hope and Love. The Faith is in the work you are to do and that you will continue to do. The Hope is that you will improve on this work. You are bound to do this, because the future of medicine is in your hands. And the last is Love; that is love for the unfortunate victims of disease and injury who make all this vast hospital complex necessary.